

Background Information

Doga CEDDEN

Nationality: Turkish

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Affiliation: University of Göttingen, Johann-Friedrich-Blumenbach Institute, GZMB, Department of Evolutionary Developmental Genetics, Göttingen, Germany

Academic Title: M.Sc. in Crop Protection



Educational Background

10/2022 – ongoing

(Expected graduation in 2025)

Ph.D. - Genes in Development, Disease and Evolution

Evolutionary Developmental Genetics, University of Göttingen, Germany

10/2020 – 09/2022

M.Sc. - Crop Protection

Faculty of Agricultural Sciences, University of Göttingen, Germany

Grade: 1.19 / 5 (German scale), graduated with the highest distinction

07/2015 – 06/2020

Undergraduate – Plant Protection

Faculty of Agriculture, Ankara University, Ankara, Turkey

Grade: 3 / 4

Awards and Honors

01/2023

Most Original Master's Thesis (First Place)

Bestowed by the Faculty of Agricultural Sciences, University of Göttingen

For the Master's Thesis entitled: "Investigation of the potential of RNA interference technology for the management of the cabbage stem flea beetle, *Psylliodes chrysocephala* (Coleoptera: Chrysomelidae)"

Press release: <https://www.uni-goettingen.de/en/54088.html?id=6947>

04/2019

Best Student Poster Presentation (Second Place)

1st International Molecular Plant Protection Congress, Adana, Turkey

Press release: <http://www.agri.ankara.edu.tr/2019/04/18/fakultemiz-lisans-ogrencisi-doga-ceddene-ikincilik-odulu/>

Research

Google Scholar: <https://scholar.google.com/citations?user=NAaSc8AAAAJ&hl=en>

Research Publications:

1. **Cedden, D.**, Güney, G., Scholten, S., Rostás, M., 2024. Lethal and sublethal effects of orally delivered double-stranded RNA on the cabbage stem flea beetle, *Psylliodes chrysocephala*. Pest Management Science 80, 2282–2293. <https://doi.org/10.1002/ps.7494> (selected as Editor's Choice)
2. Güney, G., **Cedden, D.**, Hänniger, S., Heckel, D., Coutu, C., Hegedus, D., Mutlu, D., Suludere, Z., Sezen, K., Güney, E., Toprak, U., 2021. Silencing of an ABC transporter, but not a cadherin, decreases the susceptibility of Colorado potato beetle larvae to *Bacillus thuringiensis* ssp. *tenebrionis* Cry3Aa toxin. Archives of insect biochemistry and physiology. <https://doi.org/10.1002/arch.21834>
3. Güney, G., **Cedden, D.**, Hänniger, S., Hegedus, D.D., Heckel, D.G., Toprak, U., 2024. Peritrophins are involved in the defense against *Bacillus thuringiensis* and nucleopolyhedrovirus formulations in *Spodoptera littoralis* (Lepidoptera: Noctuidae). Insect Biochemistry and Molecular Biology 166, 104073. <https://doi.org/10.1016/j.ibmb.2024.104073> (co-first author)
4. Güney, G., Toprak, U., Hegedus, D.D., Bayram, Ş., Coutu, C., Bekkaoui, D., Baldwin, D., Heckel, D.G., Hänniger, S., **Cedden, D.**, Mutlu, D.A., Suludere, Z., 2021. A look into Colorado potato beetle lipid metabolism through the lens of lipid storage droplet proteins. Insect Biochemistry and Molecular Biology, From Fat to Fact: Recent Insights on Insect Lipid Metabolism 133, 103473. <https://doi.org/10.1016/j.ibmb.2020.103473>

Preprints:

1. Buer, B., Dönitz, J., Milner, M., Mehlhorn, S., Hinners, C., Siemanowski-Hrach, J., Ulrich, J.K., Großmann, **D.**, **Cedden, D.**, Nauen, R., Geibel, S., Bucher, G., 2024. Superior target genes and pathways for RNAi mediated pest control revealed by genome wide analysis in the red flour beetle *Tribolium castaneum*. <https://doi.org/10.1101/2024.01.24.577003>
2. **Cedden, D.**, Güney, G., Debaisieux, X., Scholten, S., Rostás, M., Bucher, G., 2024. Effective target genes for RNA interference-based management of the cabbage stem flea beetle. <https://doi.org/10.1101/2024.04.30.591975>
3. Güney, G., **Cedden, D.**, Koernig, J., Ulber, B., Beran, F., Scholten, S., Rostas, M., 2024. Physiological and transcriptional changes associated with obligate aestivation in the cabbage stem flea beetle (*Psylliodes chrysocephala*). <https://doi.org/10.1101/2024.04.08.588545>

Research Support:

10/2022 – ongoing

Research Grants – Doctoral Programmes in Germany

For the Ph.D. project proposal entitled: "Improvement of double-stranded RNA designs for efficient RNAi-based pest control" of which I am the primary investigator

Awarded by DAAD (German Academic Exchange Service)

Founded by the German Federal Foreign Office, ~16,500 € per year

Research Talks and Posters

1. **Cedden, D.**, Scholten, S., Bucher, G., 2023. Optimization of small interfering RNAs derived from double-stranded RNAs for enhanced pest control. XII European Congress of Entomology, Crete, Greece.
2. **Cedden, D.**, Güney, G., Rostás, M., Scholten, S., 2023. Identification of the microRNAs involved in the regulation of aestivation in the cabbage stem flea beetle. XII European Congress of Entomology, Crete, Greece.

3. **Cedden, D.**, 2023. Lethal and sublethal effects of orally delivered double-stranded RNA on the cabbage stem flea beetle. Gemeinschaft zur Förderung von Pflanzeninnovation e. V. 2023 annual meeting, Einbeck, Germany (**invited speaker**)
4. **Cedden, D.**, Güney, G., Mutlu, D., Suludere, Z., Toprak, U., 2019. SEM and light microscopy of the fat body and digestive system in overwintering Colorado potato beetle, *Leptinotarsa decemlineata* (Coleoptera: Chrysomelidae). Entomology 2019, ST. LOUIS, MO
5. **Cedden, D.**, Güney, G., Mutlu, D., Suludere, Z., Toprak, U., 2019. Identification of Circadian Timekeeping genes in Colorado potato beetle, *Leptinotarsa decemlineata* (Coleoptera: Chrysomelidae). 1st International Molecular Plant Protection Congress, Adana, Turkey

Mentorship experience:

- I trained one Master's student in 2023 and currently training another Master's student at the University of Göttingen. Also, I supervised one undergraduate student's summer internship in 2023.

Outreach

- ❖ Master's Thesis findings were publicized by blogs and Göttingen's local newspaper <https://agrardebatten.de/neues-aus-goettingen/umweltfreundliche-bekaempfung-des-rapserrdflohs-und-rote-bete-fuer-milchkuehe/>
- ❖ I organized a workshop for "double-stranded RNA synthesis" at SPIRIT summer school (09/2023, University of Göttingen, Germany), which was participated by diverse students around Europe
- ❖ A behavioral analysis script I developed was publicized by Zantiks (Cambridge, UK) <https://zantiks.com/support/3rd-party-scripts/measuring-movement-in-the-adult-cabbage-stem-flea-beetle-3rd-party>

Service

Professional Societies:

- ❖ I was on the appointed organization committee for the 1st International Molecular Plant Protection Congress (2019, Adana, Turkey) and Frontiers in Molecular Zoology Symposium (2023, Göttingen, Germany)

Society Memberships:

- ❖ Entomological Society of America
- ❖ Gemeinschaft zur Förderung von Pflanzeninnovation e. V. (Community for the Promotion of Plant Innovation)

Community and Other:

- ❖ I developed a free-to-play app to help people with mental ailments such as ADHD and Dementia <https://play.google.com/store/apps/details?id=org.numbergame.numbergame&hl=en&gl=US>
- ❖ I serve as an international integration tutor for the student dormitories of Studentenwerk Göttingen (Germany)

References

- ❖ Prof. Dr. Gregor Bucher (Ph.D. supervisor, University of Göttingen, Germany): gbucher1@gwdg.de
- ❖ Prof. Dr. Michael Rostás (M.Sc. supervisor, University of Göttingen, Germany): michael.rostas@uni-goettingen.de
- ❖ Prof. Dr. Umut Toprak (Undergraduate supervisor, Ankara University, Turkey): Umut.Toprak@agri.ankara.edu.tr